CLAIMS

What is claimed is:

1. An electromechanical system, comprising:

a drive component that comprises a drive axis;

a pendulous sensor component that comprises a center of mass;

a hinge component that comprises a rotation axis;

wherein the drive component makes a determination of a drive direction, wherein upon the determination of the drive direction, the drive component determines an alignment of a pendulous axis, that intersects the center of mass of the pendulous sensor component and the rotation axis of the hinge component, with the drive axis of the drive component;

wherein the drive component and the pendulous sensor component are coupled with the hinge component, wherein a location of the hinge component causes the alignment of the pendulous axis to be substantially parallel with the drive direction of the drive component.

2. The system of claim 1, wherein the drive component comprises one or more dither beams, wherein the drive component makes the determination of the drive direction based on a determination of an alignment of one or more of the one or more dither beams with the drive axis.

3. The system of claim 2, wherein the drive component employs an acceleration to induce one or more oscillations at the pendulous sensor component, wherein the pendulous sensor component measures a portion of the acceleration to make the determination of the alignment of the one or more of the one or more dither beams with the drive axis.

4. The system of claim 3, wherein the drive component employs a portion of the acceleration to increase a quadrature value of the pendulous sensor component, wherein the location of the hinge component causes a reduction in the quadrature value of the pendulous sensor component.

5. The system of claim 1, wherein the drive component comprises one or more dither beams with one or more etchings, wherein the drive component employs the one or more etchings of the one or more dither beams to determine the alignment of the pendulous axis with the drive axis.

6. The system of claim 5, wherein the drive component employs the one or more etchings to increase a quadrature value of the pendulous sensor component, wherein the location of the hinge component causes a reduction in the quadrature value of the pendulous sensor component.

7. The system of claim 1, wherein the hinge component comprises one or more etchings, wherein the hinge component employs the one or more etchings to cause the alignment of the pendulous axis to be substantially parallel with the drive direction of the drive component.

8. The system of claim 1, wherein the alignment of the pendulous axis with the drive axis comprises a misalignment;

wherein the drive component causes the pendulous sensor component to oscillate about the hinge component based on the misalignment, wherein a location of the hinge component corrects the misalignment to cause the pendulous axis to be substantially parallel with the drive direction of the drive component.

9. The system of claim 1, wherein the drive component comprises one or more dither beams and one or more etchings, wherein the hinge component comprises one or more etchings, wherein the drive component makes a determination of an alignment of one or more of the one or more dither beams with the drive axis;

wherein the dither drive component makes the determination of the drive direction based on the alignment of the one or more of the one or more dither beams with the drive axis;

wherein upon determination of the drive direction, the drive component employs the one or more etchings of the drive component to make the determination of the alignment of the pendulous axis with the drive axis;

wherein upon determination of the alignment of the pendulous axis with the drive axis, the hinge component employs the one or more etchings of the hinge component to cause the alignment of the pendulous axis to be substantially parallel with the drive direction of the drive component.

10. A method, an electromechanical system that comprises a drive component that comprises a drive axis and one or more dither beams, wherein the drive component actuates a pendulous sensor component that comprises a center of mass, the method comprising the steps of:

determining an alignment of the drive axis with the one or more dither beams;

identifying a drive direction of the drive component based on the alignment of the drive axis with the one or more dither beams; and

positioning a hinge component, that connects the drive component and the pendulous sensor component, at a location that causes a pendulous axis, that intersects a rotation axis of the hinge component and the center of mass of the pendulous sensor component, to be substantially parallel with the drive direction of the drive component.

11. The method of claim 10, wherein the step of determining the alignment of the drive axis with the one or more dither beams comprises the steps of:

employing an acceleration to induce one or more oscillations at the pendulous sensor component; and

measuring a portion of the acceleration to determine the alignment of the drive axis with the one or more dither beams.

12. The method of claim 11, wherein the step of measuring the portion of the acceleration to determine the alignment of the drive axis with the one or more dither beams comprises the steps of:

increasing a quadrature value of the pendulous sensor component based on the alignment of the drive axis with the one or more dither beams; and

positioning the hinge component to reduce the quadrature value of the pendulous sensor component.

13. The method of claim 10, wherein the one or more dither beams comprise one or more etchings, wherein the step of identifying the drive direction of the drive component based on the alignment of the drive axis with the one or more dither beams comprises the steps of:

determining the alignment of the one or more dither beams with the drive direction through employment of the one or more etchings;

increasing a quadrature value of the pendulous sensor component based on the alignment of the one or more dither beams with the drive direction; and

positioning the hinge component to reduce the quadrature value of the pendulous sensor component.

14. The method of claim 10, wherein the hinge component comprises one or more etchings, wherein the step of positioning the hinge component at the location that causes the pendulous axis to be substantially parallel with the drive direction of the drive component comprises the steps of:

determining the location of the hinge component that causes the pendulous axis to be substantially parallel with the drive direction of the drive component through employment of the one or more etchings; and

employing the location of the hinge component to reduce a quadrature value of the pendulous sensor component.

15. The method of claim 10, the method further comprising the steps of:

actuating the pendulous sensor component with the drive component; and

causing the pendulous sensor component to oscillate about the hinge component.

16. A process, comprising the steps of:

etching one or more dither beams of a drive component with a deep reactive ion process; and

aligning a pendulous axis, that intersects a center of mass of a pendulous sensor component and a rotation axis of a hinge component, with a drive axis through employment of the deep reactive ion process.

17. The process of claim 16, wherein the step of aligning the pendulous axis with the drive axis through employment of the deep reactive ion process comprises the steps of:

increasing a quadrature value of the pendulous sensor component through employment of the deep reactive ion process; and

locating the hinge component to promote a reduction in the quadrature value of the pendulous sensor component.

18. The process of claim 17, wherein the drive component and the pendulous sensor component are coupled with the hinge component in a non-parallel alignment, wherein the step of locating the hinge component to promote the reduction in the quadrature value of the pendulous sensor component comprises the steps of:

etching the hinge component with an anisotropic process to alter the non-parallel alignment; and

aligning the pendulous axis with the drive direction of the drive component in a substantially parallel manner through employment of the anisotropic process.

19. The process of claim 17, wherein the drive component and the pendulous sensor component are coupled with the hinge component, wherein the step of locating the hinge component to promote the reduction in the quadrature value of the pendulous sensor component comprises the steps of:

etching the hinge component with an anisotropic process; and

reducing the quadrature value of the pendulous sensor component through employment of the anisotropic process.

20. The process of claim 16, wherein an electromechanical system is produced according to the process, wherein the electromechanical system comprises the hinge component, the drive component, and the pendulous sensor component.

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